

REMARKS

The applicant respectfully requests reconsideration of the rejections set forth in the official action in view of the foregoing amendments and the following remarks.

The Amendments

Claims 1 and 8 have been amended. Written support for the terms added by the amendments can be found as follows.

“ . . . wherein the early reflection generation stage . . . ”: page 4, lines 26-29; page 5, lines 18-20; and page 8, lines 11-17.

35 USC 102(b): Claims 1, 5, 8, and 12

The Examiner rejected claims 1, 5, 8, and 12 under 35 USC 102 (b) as unpatentable over US Patent No. 5,555,306 (Gerzon).

The Applicant submits that Claims 1 and 8 as now presented are not anticipated by Gerzon. The Applicant's claimed system and method as set forth in Claims 1 and 8 respectively includes an early reflection generation stage with a unitary transfer function matrix. Gerzon does not show or describe a sub-system that provides an overall system that is unitary.

More particularly, Claim 1 is directed to a unitary early reflection enhancement system that includes an early reflection generation stage that has “ . . . an overall power gain that is substantially constant with frequency to provide a unitary transfer function matrix ” Similarly, Claim 8 is directed to a method for enhancing acoustics of a room or auditorium with an early reflection generation stage that has “ . . . an overall power gain that is

substantially constant with frequency to provide a unitary transfer function matrix” This characteristic of the early reflection generation stage is achieved by using at least one orthonormal cross-coupling matrix. Where there is more than one matrix, the matrices are in series. The matrices perform cross-coupling between the delay lines and the orthonormality provides the unitary transfer function matrix characteristic.

Upon reading the text at column 7, line 45, to column 8, line 26, of Gerzon, it is readily apparent that the system described in that reference does not include an early reflection generation stage that has an overall power gain substantially constant with frequency to provide a unitary characteristic in the system overall. Each output signal path is combined in adding means (15) resulting in non-unitary transfer function matrix for the whole system.

The non-unitary nature of the system described in Gerzon is also apparent when the purpose of the matrices is considered as described at column 7, lines 59 to 63 of Gerzon. The matrices’ sole purpose is to rotate or otherwise alter the stereophonic positions in the matrices’ output signals. This alters the output signal positions from the initial sounds in the input signals. The matrices need not provide a unitary characteristic to achieve this, which is evident from the fact that either an orthonormal or a unitary matrix can be used. Because Gerzon is simulating source distance, his gain, G_i are constrained by equations such as (7), (11), (13), and (21). It is impossible to get system transfer function matrices which are unitary when the gains are independently controlled.

In contrast, the matrices used in the Applicant’s claimed system and method, as set forth in Claims 1 and 8 respectively, are used for the purpose of cross-coupling signals to various delays to produce reflections while

maintaining a unitary characteristic. It is an important and novel feature of the Applicant's claimed system and method that the matrix is orthonormal. The system and process described in Gerzon is very different in function and purpose relative to the Applicant's claimed system and method as set forth in Claims 1 and 8, respectively.

For all of the foregoing reasons, it is believed that the rejection of Claims 1 and 8 under Section 102(b) is not based on substantial evidence. Therefore, the rejection should be withdrawn.

35 USC 103(a): Claims 6 and 7

The Examiner rejected Claims 6 and 7 under 35 USC 103(a) as being unpatentable over Gerzon in combination with WO 93/23847 (Poletti).

Claims 6 and 7 are dependent claims that refer back to Claim 1 either directly or indirectly. Therefore, Claims 6 and 7 are allowable over Gerzon either alone or in combination with Poletti for at least the same reasons as Claim 1. Accordingly, the rejection of Claims 6 and 7 should be withdrawn.

The New Claims

In the Official Action, the Examiner indicated that Claims 3, 4, 10, and 11 were objected to solely for being dependent upon rejected base claims. The Examiner also indicated that Claims 3, 4, 10, and 11 would be allowable if rewritten in independent form including all of the features set forth in the respective base claims, Claim 1 and 8, respectively. New Claim 13 includes all of the features set forth in Claims 1 and 3. New Claim 18 includes all of the steps set forth in Claims 8 and 10. Therefore, new Claims 13 and 18 are allowable. New Claims 14-17 are dependent upon Claim 13, either directly or

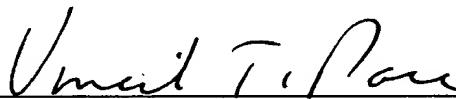
indirectly and new Claims 19 and 20 are dependent upon Claim 18. Therefore, all of the new claims are in condition for allowance.

CONCLUSION

In view of the foregoing amendments and remarks, it is believed that this application is now in condition for allowance. The Examiner is respectfully requested to reconsider the application in the light of the amendments and remarks presented hereinabove.

Respectfully submitted,

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